DRIVER

SPECIAL ISSUE

NOVEMBER 1980

ECONOMICAL transportation

THE SUBJECT IS WELL COVERED

Economical transportation no more means saving fuel and money than it means expending fuel and money. Economical transportation means controlling spending and saving time, energy, space and everything else associated with transportation *to your best possible advantage*.

After all, what's economy to you may seem either wasteful or totally unacceptable to somebody else. Look around and you'll get the picture. The boss has that big sedan for the family and a small sporty car to drive back and forth to work. The secretary has the medium-sized imported four-door while the section chief has two small economy models. These are as much economical transportation to each of them as are the vehicles you and your peers own. There's the station wagon for the guy with the big family, the muscle car of mister ego and the one held together by wire that belongs to your office backyard mechanic.

As you are aware — or should be — individual needs dictate what is economical transportation. Therefore, the first thing to do when shopping for wheels is to determine your needs. To do this you must ask some very pointed questions and answer them frankly. Kidding yourself will only lower the economics of your purchase. For example, a new diesel Rabbit may get the best fuel mileage of any vehicle available, but if you can't afford the payments and have six kids, the mpg figures are a fool's economy.

Start your self-questioning with the basics:

Economy and Cadillac will be easier to say together in 1981 because of some significant engineering innovations. The standard powerplant is a new 6.0-liter modulated displacement V-8-6-4 engine with digital fuel injection. The V-8-6-4 features an electromechanical system, controlled by a microprocessor, that actuates only the number of cylinders needed to satisfy driving requirements at any given moment. The V-6 gasoline-powered Sedan de Ville pictured has an optional automatic seat belt system.

Buick's 1981 Riviera with optional 5.7-liter V-8 diesel should have a highway cruising range of over 700 miles. The 4.1-liter V-6 is standard. Other Buick engines include the 3.8-liter turbo-charged V-6 and 5.0-liter V-8.

Puncture-sealing tires are optional on all 1981 Oldsmobiles including this Custom Cruiser. When an object, a nail for instance, passes through the tread and sealant, the sealant adheres to it. When the object is removed, the sealant is pulled into the hole in the tread. This results in keeping the tire from going flat even though there may be a slight loss of air when the nail is pulled out.

■ How many people are in the family?

■ How many people are in the car pool?

■ How many people will normally ride in the vehicle?

■ What's the anticipated maximum number of riders?

■ How many people will drive this vehicle?

■ List the uses for this vehicle (commuting, shopping, vacations, business, etc):

■ This vehicle is to be:

- □ the only vehicle
- □ the primary vehicle
- □ a second vehicle

■ Assign priority numbers according to your personal preference:

- □ Fuel Economy
- □ Performance
- □ Safety
- □ Appearance
- □ Roominess
- □ Durability
- □ Compactness
- □ Prestige
- □ Maintenance
- □ Resale Value
- □ Finish
- □ Handling
- □ Ride

■ Taking all this into account, what style vehicle is the most practical?

While the answer to that question may have been painful to what you viewed as your lifestyle or have stepped firmly on your ego, the next line of questions is going to hit even harder. This is the part where you ask yourself, "How much can I afford for my total transportation budget?" DRIVER is not about to tell you what you can and can't afford based on any formula. You know that better than anybody else. For example, those who don't smoke or believe in the five Ws (Whiskey, Women, Wine and Woad Wacing) can afford more than those who do.*

A single individual can afford more for transportation than a one-income family (although singles should realistically ask themselves about marriage possibilities and families when making their needs list). And so on and so on.

continued

** (Editor's Note: This is an obviously sexist remark, but the author has been wanting to use it for months so we're letting him get it out of his system. Suffice it to say that, man or woman, the more we spend on cigarettes, pina coladas and disco lessons, the less we have left for car payments.)*

DRIVER

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what's ECONOMICAL transportation? 1981

TABLE I

Mileage Dependent Costs based on age of vehicle *

Year:	1st	2nd	3rd	4th	5th	6th
Miles						
10,000	$1,569.24	$1,790.28	$2,012.78	$2,236.75	$2,462.18	$2,689.09
11,000	1,726.15	1,969.29	2,214.04	2,460.40	2,708.39	2,957.98
12,000	1,883.06	2,161.48	2,415.32	2,684.07	2,954.59	3,226.88
13,000	2,039.97	2,327.31	2,616.57	2,907.71	3,200.80	3,495.76
14,000	2,196.81	2,506.34	2,817.83	3,131.39	3,447.01	3,764.68
15,000	2,353.81	2,685.33	3,019.10	3,355.03	3,693.21	4,033.55
16,000	2,510.72	2,864.36	3,220.36	3,578.70	3,939.41	4,302.46
17,000	2,667.63	3,043.36	3,421.62	3,802.36	4,185.56	4,571.33

* Obtained from an idealized mathematical model incorporating the concept of "Preventive Maintenance." See Backyard Mechanic "How to make your car last forever," June 1980.

The budget question check list looks like this:

■ Maximum affordable transportation budget:

□ Less estimated mileage-related costs:

□ Less estimated fixed cost:

□ Less other transportation costs (bus, train, etc.):

□ Equals maximum monthly payment:

There are ways of estimating the mileage-related and fixed costs. But remember, the accent in all these is on estimating. The following tables are only estimates. Furthermore, they are only valid for this year because of inflation.

Mileage-related costs include gasoline, oil, maintenance, tires and repairs. The gasoline portion is figured at 15 miles per gallon costing $1.25 per gallon. Maintenance portions are based on front-engine, rear-wheel-drive American cars using the concept of "Preventive Maintenance," from the Backyard Mechanic "How to make your car last forever," June 1980.

Fixed costs include insurance, registration and license.

For example, if you're driving a 1977 model vehicle 12,000 miles annually, the mileage related costs in 1980 will be found on the 12,000-mile line in the fourth-year column. The $2,684.07 annual costs rounds out to about $223.67 per month. Last year's transportation inflation was 22.49 percent while the economy's inflation was 14.15 percent. To estimate mileage-dependent costs for 1981 based on last year's inflation rate for the same vehicle, take the 12,000-mile figure from the fifth-year column and multiply it by 1.2249. Thus next year's mileage-related costs would be $3,619.08 or $301.59 per month. If this same vehicle cost $4,000 new, you'll find the costs independent of mileage on the $4,000 line under the fourth-year column. That would be $717.68 annually or $59.81 monthly fixed costs. Again, inflation rates would have to be applied for any year other than 1980.

The vehicle maintenance bills seem large enough by themselves. But when spread out over the months and then combined with monthly fuel figures, you sometimes wonder how anybody can afford to drive.

Of course, there are ways of dealing with these high costs and reducing the monthly outlay. As you will recall, the mileage related costs were based on a 15 mpg vehicle and $1.25 a gallon fuel. Look at what happens to the annual fuel bill when you get a vehicle that delivers better in relation to various costs per gallon. (See table at bottom of page.)

continued

TABLE II

Costs Independent of Mileage based on age of vehicle**

Year:	1st	2nd	3rd	4th	5th	6th
Cost						
$ 4,000	$ 692.18	$690.45	$700.98	$717.68	$740.54	$766.50
$ 6,000	753.64	733.48	728.74	739.18	752.94	775.76
$ 8,000	815.09	776.50	759.44	757.73	768.27	785.03
$10,000	876.55	819.53	790.14	779.22	781.61	849.94
$12,000	938.02	862.54	821.01	797.78	798.96	806.50
$14,000	999.48	905.57	851.56	822.21	814.31	818.71
$16,000	1,060.95	948.59	879.32	843.70	829.63	827.97

** Includes license, registration and insurance.

Price per Gallon:	$1.25	$1.50	$1.75	$2.00	$2.25	$2.50
MPG						
15	$1,000	$1,200	$1,400	$1,600	$1,800	$2,000
20	750	900	1,050	1,200	1,350	1,500
25	600	720	840	960	1,080	1,200
30	500	600	700	800	900	1,000
35	429	514	600	685	771	857
40	375	450	525	600	675	750
45	333	400	467	533	600	667

what's ECONOMICAL 1981 transportation?

Ford's World Car, Escort, doubles up on economy. Equipped with a manual transaxle and 1.6-liter engine, the Escort is expected to achieve EPA ratings of 30 estimated mpg and 44 highway. Additionally, recommended scheduled maintenance costs are expected to average less than $32 a year in the first five years or 50,000 miles of normal driving. The Escort has the exterior dimensions of a subcompact, but the roomy interior qualifies it as a compact car in the EPA size classifications.

Refinements inside and out are aimed at making Chevrolet's Citation a more economical buy in 1981. Thirty-pound tire pressures reduce rolling resistance. The Electronic Spark Timing (ESC) system is one of five different operations controlled by the Computer Command Control (CCC) system. ESC provides the optimum spark timing for improved fuel economy, driveability and emissions control.

Chevette is more fuel efficient in 1981 with computer control of power train functions providing further mileage gains. A flush-mounted windshield reduces aerodynamic drag. Judge for yourself if the power steering option is necessary and at what fuel costs.

(left)
Does Chevrolet's 1981 Malibu Classic 4-door sedan fill your needs list? Efficiency improvements for 1981 include reduced rolling resistance through use of new standard 35 psi higher-pressure radial tires. The Computer Command Control (CCC) system permits more precise fuel control.

As you can see, it is very important to have picked a vehicle only as large as you need when making out that "needs" list. Maybe you ought to consider reviewing your needs again.

There are a few more questions that come to mind with the budget check list. Most of these deal with what your present vehicle is worth and what your purchase will be worth when you are ready to trade it.

- Approximately how much is your present vehicle worth
  - □ Retail
  - □ Trade-in

The answers to these questions can be found in the "Blue Book." This guide for dealers is usually available at larger libraries, or the local credit

Camaro for 1981 shows that styling and performance can come with economy. To boost fuel economy, Camaro has added computer-controlled converter clutches to automatic transmissions and another engine to the Z-28. Camaro also has new standard power brakes with low-drag front discs and lightweight power booster, a compact spare tire and a lightweight battery.

The two family-size Chevrolets, Caprice and Impala, were given a technological overhaul in 1980 to boost EPA fuel economy estimates 20 percent. For 1981, the Computer Command Control (CCC) system takes over many heretofore mechanical functions, helping to maintain fuel economy and driveability standards. Models with optional 5-liter V-8 engines are equipped with a new energy-efficient, four-speed overdrive, automatic transmission. Other features on the 1981 Caprice and Impala include reduced-drag front disc brakes and a second zinc-base protective coating on brake and fuel lines to enhance durability.

Corvette may not be everyone's idea of economical transportation, but when it comes to innovation the 1981s uphold Corvette's reputation. This year it is an industry first — a reinforced fiberglass single leaf transverse rear spring that saves 33 pounds. Other 1981 weight reductions include thinner side glass and lighter stainless steel exhaust manifolds. A revised automatic three-speed transmission utilizes a converter clutch in both second and third gears for more economical driving.

union or bank may be willing to let you browse through theirs. While you are thumbing through the "Blue Book" look at how the prices on used vehicles similar to your planned purchase are faring on the market. You'll need that information to estimate the value of the new purchase at the end of your ownership.

In days past you could estimate how much a vehicle would be worth down the road with some very simple formulas using the vehicle's original selling price. Today, inflation has voided almost all these old rules. However, you can get a hint by looking at the selling price of a similar new model. For example, you paid $5,000 for your 1977 model car. Under the old rules it would have an approximate book value today of $1,715. In

continued

contrast, the 1980 equivalent of your 1977 model costs $10,000, so the approximate book value today is actually $3,430.

Meanwhile, there are a few vehicles that never seem to lose value and, in fact, cost more today than they did new. That's why you look over the "Blue Book" so carefully.

The computer-valid figures for book values by year are: first, 70.0%; second, 49.0%; third, 34.3%; fourth, 24.0%; fifth, 16.8%; and sixth, 11.8%. After the sixth year, depreciation may cease entirely. However, the non-real world computer-valid figures for the seventh through 11th years are: 8.3%, 5.8%, 4.1%, 2.9% and 2.0%.

With your "needs" and "afford" lists you are now equipped to go shopping for that economical transportation. If you have been honest with yourself about your needs and finances, you should soon be separating those cars you think you want from the list of those you should have. The end result will be a more pleasing and economical vehicle for you.

what's ECONOMICAL 1981 transportation?

Low drag brakes are standard on 1981 Oldsmobile Omegas. The low drag is accomplished by designing the piston to retract from the surface more effectively when the brakes are released. To compensate for the higher retraction, Oldsmobile uses a quick take-up master cylinder.

New Styling on the Oldsmobile Cutlass Calais reduces aerodynamic drag by approximately 15 percent. To further improve fuel economy, Oldsmobile is introducing the Computer Command Control (CCC) system on all gasoline engines. This new system features electronic carburetor control that maintains a constant air/fuel ratio under most driving conditions. A second function of the new system is idle speed or idle load control. This allows the engine idle speed to be lowered, reducing fuel consumption.

Are you one of the people who rushes out to buy a car the minute new models hit the showroom floor? If not, who does? Well, through a nationwide survey the Chevrolet marketing research department says the early-model buyer sounds a lot like the individual who lives next door.

Nearly 40 percent of the early buyers are women, while 65 percent of all the buyers are married. More than 90 percent are high school grads; 25.7 percent attended college, 14.5 percent finished college and 8.3 percent have a postgraduate degree.

While the professional/technical group makes up the largest single portion of buyers (15.4 percent), it's worth noting that 10.3 percent are retired. A total of 14 percent are office workers and nine percent list their occupation as skilled trades. Other occupational groups and their percentage of total buyers are: manager (8.7); police, postal, fire (2.5); truck driver (2.0); farmer (1.7); Armed Services (1.7);

New features on the Buick Skylark include a multi-function control lever, which combines turn signals, dimmer switch, windshield washer and wiper and the available cruise control function, including the new on-off resume feature. A new spring isolator has been added between the spring and trailing arm assembly and higher damping butyl rubber body mounts are used to improve ride feel.

Aerodynamics play an important role in fuel economy and for 1981 Buick has reduced the coefficient of drag on the Regal by about 18 percent. In addition to many fuel economy improvements, the 1981 Regals have a ride and handling package available to provide more steering feel — such as in fine European cars — and yet retain an excellent ride.

New Styling teams with powertrain improvements for added fuel economy in the 1981 AMC Spirit liftback. An optional 4.2-liter 6-cylinder engine has undergone major design changes leaving it 90 pounds lighter than last year's model. The standard engine is a 2.5-liter 4-cylinder. The weight savings, coupled with such improvements in engine efficiency as a lockup torque converter with automatic transmission provide a substantial increase in fuel economy.

Renault Le Car, rated as the most fuel-efficient among gasoline-powered European imports, will be the most accessible of all foreign makes during 1981. Le Car will be marketed through American Motors Corporation, giving it the largest import dealer network in the U.S.

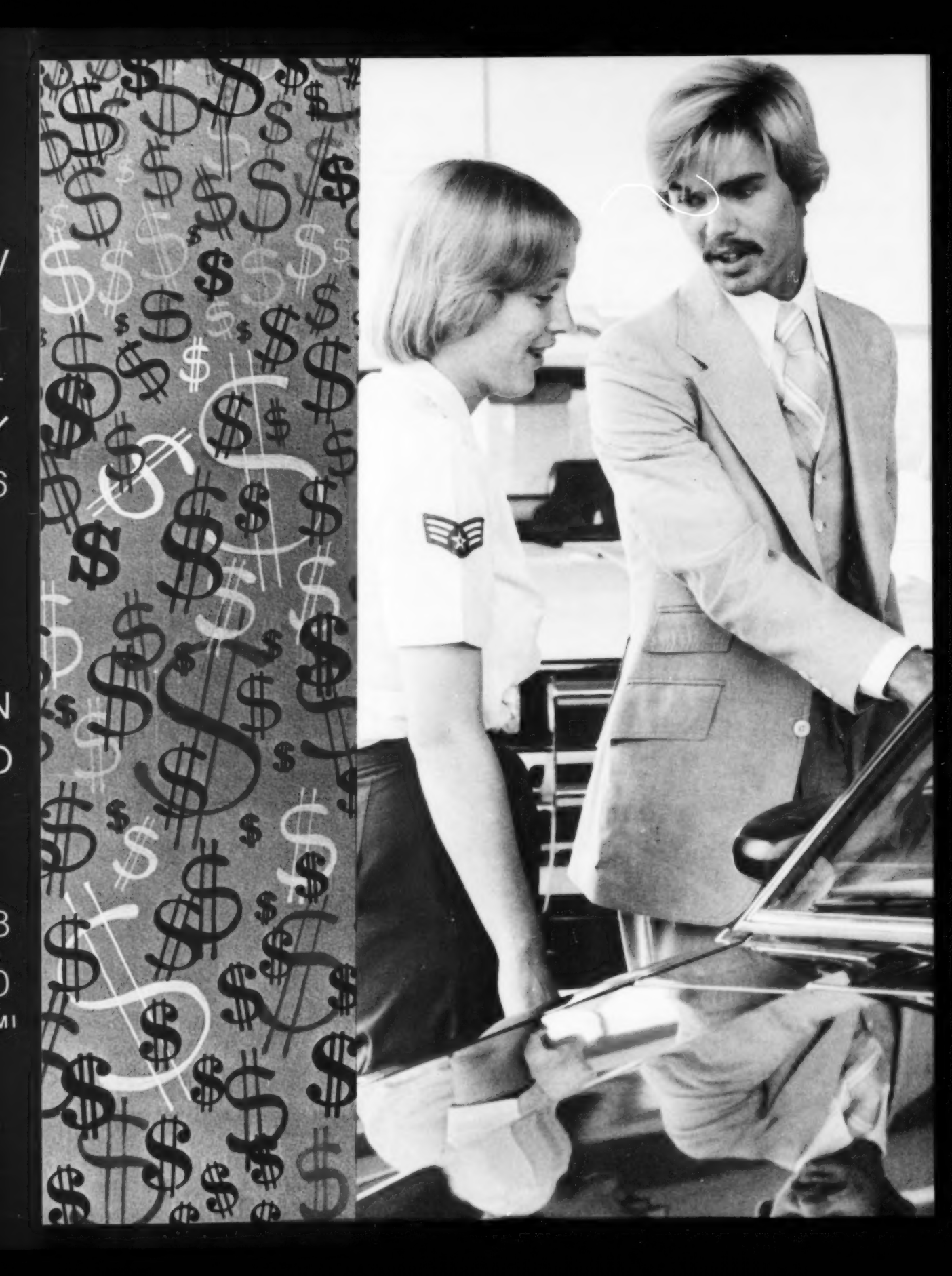
Jeep's CJ-5 Renegade features fuel efficient 2.5-liter 4-cylinder engine as standard in 1981, with a lighter 6-cylinder engine optional. A 304 cid V-8 engine is also offered. To reduce weight the front hub and rotor assemblies have been redesigned.

proprietor (1.4), and others (6.1).

Apparently there isn't much comparison shopping since one-third of the early buyers shopped only the dealer they bought from. And only 51.9 percent took a demonstration ride before buying. As a counterpoint, 75.9 percent of all import buyers take a test ride.

The prime motivating factor contributing to the purchase is durability/reliability. More than 90 percent of the buyers listed this as the most important consideration, while only 80 percent named price as the major factor and 89 percent mentioned a well-made car as the prime reason for buying. Other major considerations: riding comfort, 77 percent; dealer service, 74; gasoline mileage, 73; resale value, 70; and warranty, 69 percent.

Are you on their list?



(left)

Remember, the window sticker price is only a suggestion retail price — a starting point in the bargaining. Stickers are usually 17 to 24 percent over cost.

(right)

Sales representatives know that if the buyer isn't offered the best possible deal, the competition is sure to make the sale. However, when the personal sales representative shows you the first price, it never hurts to make a counter offer — after all, we do call them "dealers."

who deals in ECONOMICAL transportation?

Before you can buy any vehicle, new or used, you must find somebody who is willing to sell. With the used vehicles there are three sources: private owners, used car lots and new car dealers. New vehicles are fairly well limited to the new vehicle dealers.

Private owners usually offer you the best deal, especially if they are short of cash at the time and willing to bargain. However, there are numerous disadvantages to dealing with private owners. First, they generally want cash, now. They seldom are willing to hold your dream machine while you try to arrange financing. Next, they are very reluctant to turn their machine over to you for any type of check out. Which leads to the last big disadvantage when dealing with private owners: you are buying strictly "as-is" with no guarantee or recourse.

Reputable used car dealers generally offer the same services you could get at a new car dealer, and they may be able to save you a few bucks. But in most cases, a used car dealer has nothing more than a lot and, sometimes, an office. There is no service department to back up what little warranty is offered.

On the other hand, new car dealers keep the best of the trade-ins to be sold by the used car department. And while you pay more for these used vehicles, they generally have been completely checked out and reconditioned before the sale. Then, of course, there is the new car dealer's big ace in the hole: a guarantee and a service department to back it up.

Shopping for a dealer when buying a new car can be as important as the vehicle itself, if not more so.

In smaller towns where there may be only one dealer per make this is just as true as in the large cities where the competition is almost cut-throat. While small town dealers probably get a few dollars more for each vehicle because they don't have the volume, they are usually more open and up front with each sale. Word spreads fast in the small communities, and one "bad" deal could seal their business tomb.

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continued

In the larger cities, competition sets the price. Each sales representative knows that if the buyer isn't offered the best possible deal, the competition is sure to make the sale.

Your business at the dealership will be smoother if you realize from the start that the dealer has problems.

For starters, almost one in four car dealers will probably be forced out of business during the next year. The auto industry is in deep trouble and many of the marginal dealers are going to be paying the price.

A dealership is actually a small business and will earn less than one percent on the sale of each vehicle. Even though you are paying their service departments $25 or more an hour for working on your machine, the dealer is lucky to break even on the back shop.

To get a full feeling for the dealer's financial situation, look at the break-

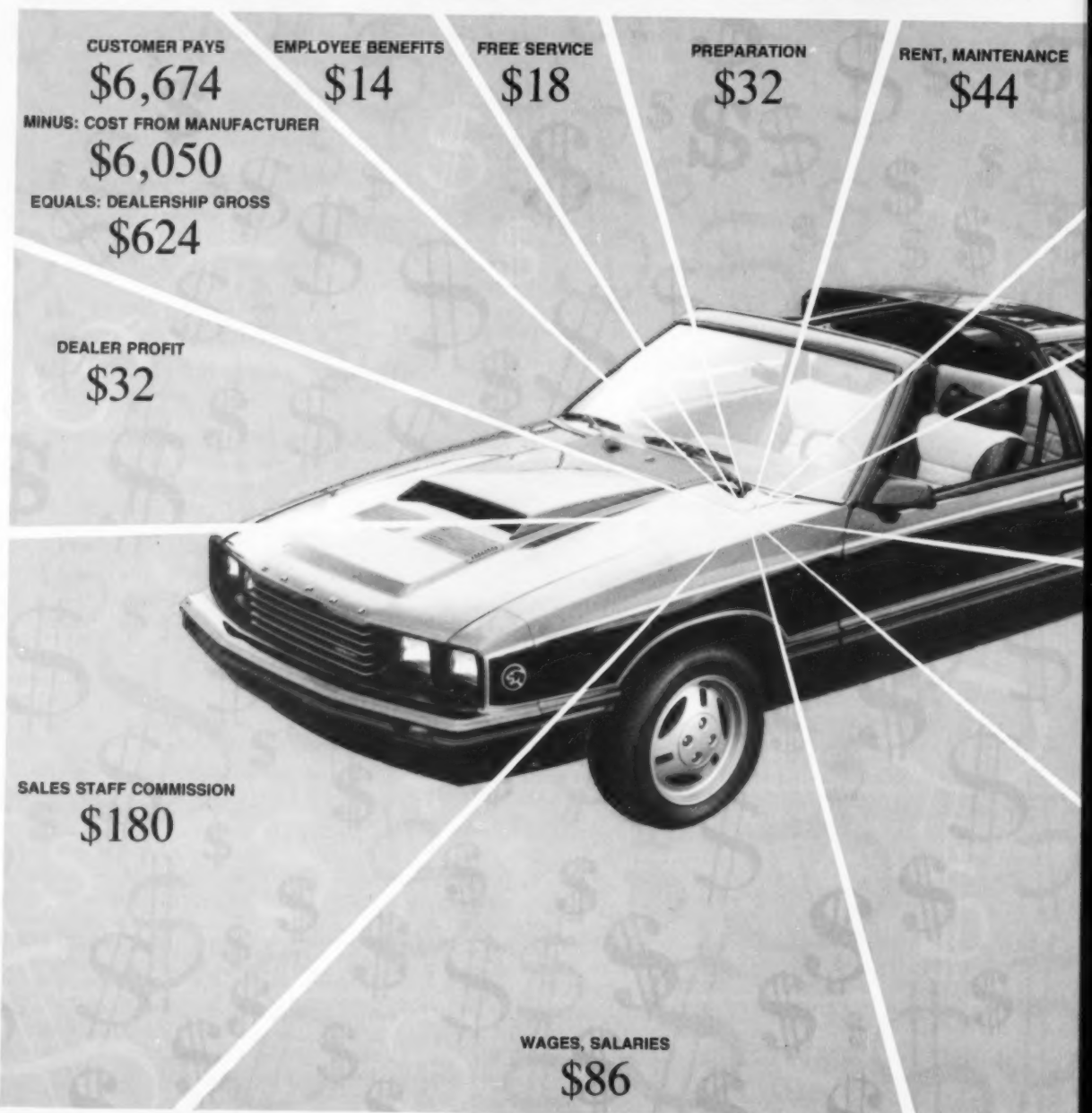


Chart not in scale

down of the sale of an average vehicle below.

In addition, the manufacturer usually rebates two percent of their price to the dealer at the end of the model year in addition to paying about $50 for pre-delivery service. The dealership may be able to double

When buying a vehicle you are also purchasing after-the-sales service. Be sure to have the personal sales representative introduce you to the service manager. While you're in the service area, look around to see how neat and well-equipped the service department is.

that $32 profit figure by arranging financing and insurance. However, in order to do so the dealership must do all the paper work.

Most dealerships have a minimum amount they must charge above the price they paid for a vehicle. For the dealership listed, the amount is $510. If you have some idea how much the dealer paid for the vehicle and its options plus a feeling for how much more money is required to break even, then you know the neighborhood of the best deal you can possibly make. There are numerous magazines available that list the wholesale price of new vehicles as well as the list price.

You can also get a clue from the list price sticker the manufacturer placed on the vehicle's window. Small car stickers are about 17 percent over dealer cost. Compact car prices range from 20 to 21 percent over cost, while list prices for larger vehicles are in the 24-to-25-over-cost range. Options vary from 17 to 24 percent above costs.

You should now have an idea of how to shop at the dealer, but at what dealer? Answer the following questions "yes" or "no" about each dealership you are comparing and the final total of "yes" checks versus the "no" checks should tell the story.

- Does the dealer have a good reputation?
- Does the dealership advertising seem high-pressure?
- Are the personal sales representatives courteous?
- Does the personal sales representative believe you are serious about purchasing?
- Does the personal sales representative keep you waiting?
- Do the sales personnel know their product?
- Is the personal sales representative willing to "deal?"
- Is the service area neat and well-equipped?
- Is the dealership relatively near your home or work?
- Is the dealership well stocked?
- Is the dealer's credit good?

The first and last questions are a matter of checking around, not only with people that have bought or had vehicles services by the dealership, but with other business people. Banks and the Better Business Bureau are excellent information sources.

If you still have some question in your mind about the dealer's reputation, consider how long he has been in the same location.

ECONOMICAL transportation

Because the overall "economical-transportation" picture must include the purchase price, it is very wise to shop your options carefully not only for their individual cost, but also for how much they affect the vehicle's fuel consumption.

To begin with, the heavier the vehicle the less mpg it will deliver, so don't buy more than you need. Also, the big boxy vehicles get less mpgs than more streamlined ones.

Always compare the EPA figures on the window stickers. Generally, smaller engines deliver more mpg than larger engines do. Also, numerically-lower rear axle ratios deliver better mpg. For example, 2.94-to-1 is better than 3.54-to-1. Properly driven, a manual transmission will get better fuel economy than an automatic. But some of the new overdrive and lock-up automatics are coming close. And note that important phrase "properly driven."

Air conditioning reduces gas mileage. Even when it is off, the extra weight of the unit hurts your fuel economy. At the same time, driving with the windows open reduces mpgs on many cars more than driving with the air conditioning on and the windows closed. It's a double-edged

razor that can cut into your fuel economy, no matter what you do.

In warm climates buy light-colored vehicles with tinted glass. In cold climates, darker colors are better.

Specific measurable mileage improvements include a three percent savings with radial-ply tires. And while diesel engines provide 25 percent better mpg than equal-sized gasoline engines, they also cost much more. Another double-edger is the oversized or extra fuel tank. While it increases your overall driving range, the extra weight hurts the mpgs.

With some real mpg-related options out of the way, the best way to look at all options is the price list. List all the options that you might want, along with what they are going to cost. Total the list — only if you are sitting down. Then go back and cut the list until the total is a reasonable figure.

Here's a sample list to get you started:

Decor Group
Light Group
Automatic Transmission
Four-speed
Five-speed
Overdrive
Larger Engine
Diesel Engine
Power Steering
Power Brakes
Air Conditioning
Radio
AM AM/FM8-Track
AM/FM AM/FM/Cassette
AM/FM Stereo
Heavy-duty brakes
H-D Tires
H-D Suspension
H-D Radiator
Four-wheel drive
Ltd. Slip Differential
Optional Tires
Radial-ply/Spare
Tinted Windshield
Tinted glass
Power windows
Power door locks
Console
Adjustable steering wheel
Electric clock
Tachometer
Special seats
Rear window defroster
Passive belt system
Remote control mirrors
Interval wipers
Rear-window wipers
Vinyl roof
Sun roof
Roof rack
Trailer-towing package
Undercoating
Rustproofing
Others:
Total:

Once you have selected the options, you'll want to compare prices between all the vehicles you've considered. A short card on each will make the job easier. The card should look something like this:

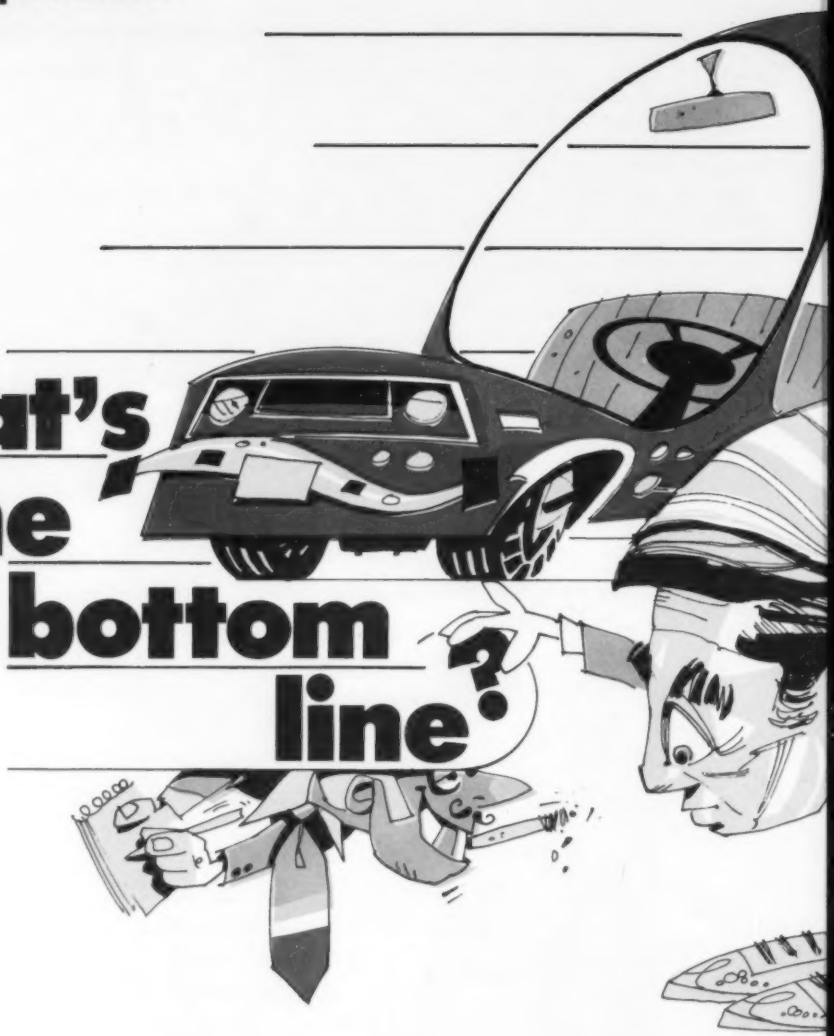
Make:
Model:
Body style:
Seating Capacity:
Color:
Engine Horsepower:
EPA City Rating:
EPA Highway Rating:
Base Price: $
Total Price: $
Total Outlay: $
(Include all taxes, license, financing, insurance, accessories and other charges.)
Trade-in offer: $
Difference between Total Outlay and Trade-in offer: $

The difference is the bottom line.

When it comes to buying economical transportation, getting to the decision-making point is only half the fun. Now that you have all the lists, checklists, prices and offers you can gather, you must weigh each one separately as well as against the others until you feel more comfortable with one choice than any of the others. But remember, you will never be able to gather all the information; just make a special effort to get all you can.

Good buying.

what's the bottom line?



Ok, you know your needs, how much you can afford to pay a month and approximately how much your dreamboat is going to set you back. Now you need to know what the payments (at the interest rate you are going to have to pay) are going to be.

The chart on this page should make estimating monthly payments and total loan costs easy. Simply locate the figure under the percentage rate you'll be paying across from the number of monthly installments you'll be making. Take that figure and multiply it by the number of $1,000 you'll be financing.

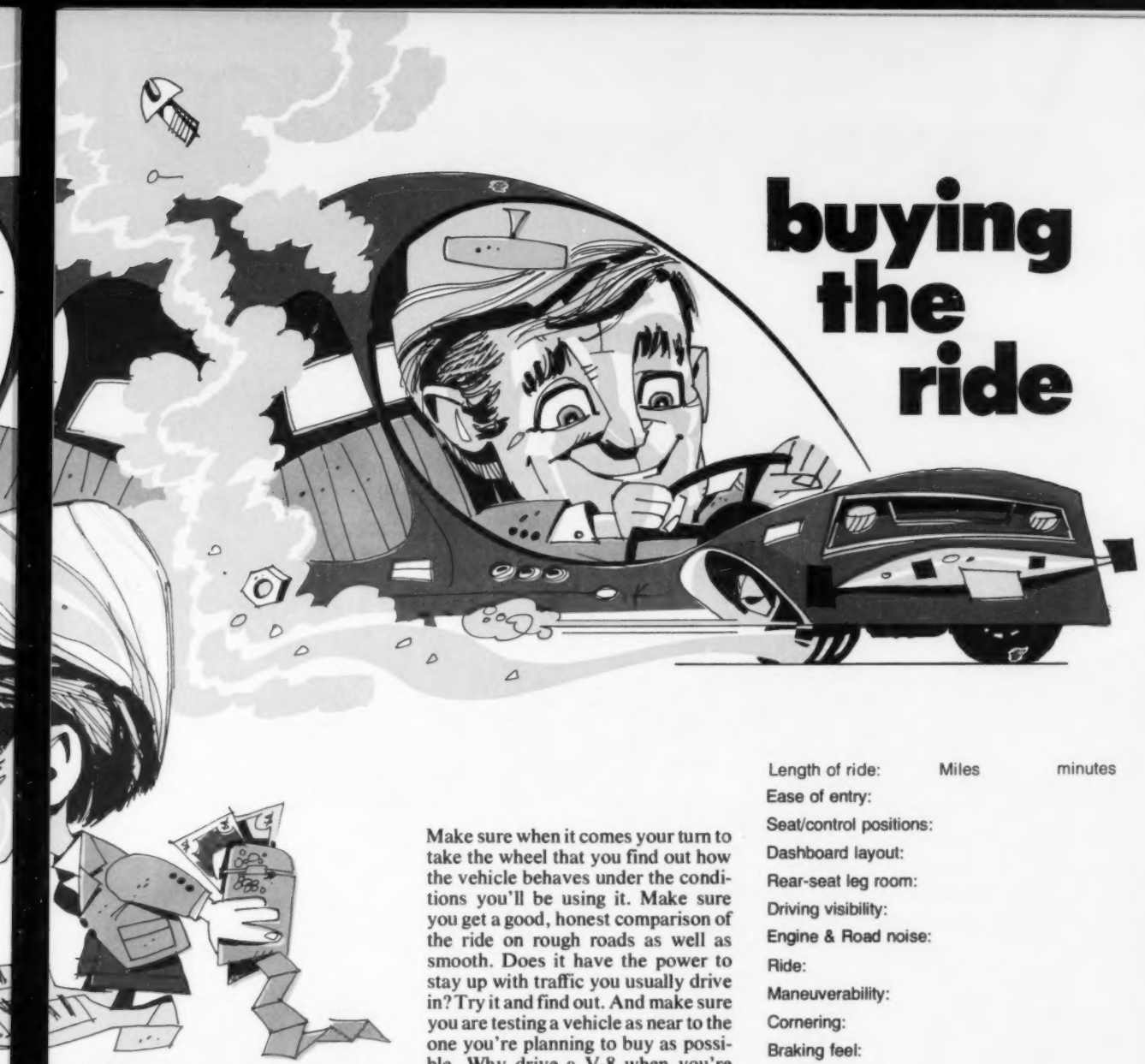
For example, say you'll need to finance $4,325 at 18 percent for 36 months. Under the 18% column in the 36 payments row you'll find $36.152. This means for every $1,000 you borrow you'll have to pay back $36.152 per month. For your loan of $4,325 you'll be borrowing $1,000, 4.325 times ($1,000 x 4.325 = $4,325). Multiply the payment per $1,000 ($36.152) by 4.325 to get the monthly payment at 18 percent interest for 36 months of $156.36 ($36.152 x 4.325 = $156.3574, rounded off to $156.36).

If you make all 36 payments at $156.36, you'll end up paying $5,628.96 for the $4,325 borrowed, or $1,303.96 of interest.

MONTHLY PAYMENT PER $1,000 OF LOAN

Rate = No. of Pmts.	9%	12%	15%	18%	21%	24%
012	$87.451	$88.849	$90.258	$91.680	$93.114	$94.560
15	70.736	72.124	73.526	74.944	76.377	77.825
18	59.598	60.982	62.385	63.806	65.245	66.702
24	45.685	47.073	48.487	49.924	51.386	52.871
30	37.348	38,748	40.179	41.639	43.130	44.650
36	31.800	33.214	34.665	36.152	37.675	39.233
42	27.845	29.276	30.749	32.264	33.821	35.417
48	24.885	26.334	27.831	29.375	30.966	32.602
60	20.758	22.244	23.790	25.393	27.053	28.768

buying the ride



The demonstration ride is probably where you will buy your new car — if you aren't just "along for the ride." You have to be in charge of this portion of the sale, or the personal sales representative could lead you to all the car's good points and gloss over the bad points so that you are never aware there are any until it is far too late.

The dealership usually has a stock ride that works best for showing off the vehicle, and unless you press the issue, you never find out the information that actually affects your needs. Don't be bashful, be critical.

Make sure when it comes your turn to take the wheel that you find out how the vehicle behaves under the conditions you'll be using it. Make sure you get a good, honest comparison of the ride on rough roads as well as smooth. Does it have the power to stay up with traffic you usually drive in? Try it and find out. And make sure you are testing a vehicle as near to the one you're planning to buy as possible. Why drive a V-8 when you're getting the four? Or an automatic if you want a five-speed?

Because the personal sales representative will probably be with you every step of the way during the demonstration ride, a check list is the best way to go. It'll also help recall things you might have overlooked or forgotten. If you are comparison shopping, a check list on each vehicle is doubly helpful.

This sample check list for a demonstration ride is a good place to start building your own. Your list will, of course, reflect your needs and priorities.

Length of ride: Miles minutes

Ease of entry:

Seat/control positions:

Dashboard layout:

Rear-seat leg room:

Driving visibility:

Engine & Road noise:

Ride:

Maneuverability:

Cornering:

Braking feel:

Steering feel:

Parking ease:

Shifting smoothness:

Trunk size:

Finish:

Rate each area Excellent, Good or Fair.

Ask yourself, "Did the personal sales representative rush any part of the demonstration?"

Then write down all the specific comments and quotes others had about the ride.

LOOKING at the ROAD TEST

To get the most out of any purchase, you must be an educated shopper. That means you have to do your homework. But this quest for knowledge can be more entertaining than the usual tedious book learnin'. You get your knowledge by reading consumer publications — magazines.

When it comes to motor vehicles, the arena is full of competitors vying for the public's attention. There are general publications such as *Consumer Reports*, and others with their own twists. Ones with twists include: *Mechanix Illustrated*, *Popular Mechanics* and *Popular Science*. Publications aimed more at motor vehicle enthusiasts include *Motor Trend*, *Car & Driver* and *Road Test*. Leaning more toward the sporty car set are magazines such as *Road & Track* and *Sports Car Graphic*. Of course, there are also other specialty magazines such as *Hot Rod*, *Rod & Custom*, etc.

Expanding rapidly are the truck/off-road magazines such as *Four Wheeler*, *PV4*, *Off Road* and *4 Wheel & Off-Road*. There are magazines for motor home people and trailering types. And then there are the motorcycle circle of magazines including *Cycle*, *Cycle Guide*, *Cycle World*, *Motorcyclist* and *Road Rider*.

And those are just some of the United States publications. Europe and Asia have their own endless lists.

As a car (or cycle) buyer you are looking for information to help you make your choice. And these magazines can provide more than you would ever be able to use from their road tests.

Generally speaking, the magazines all test vehicles pretty much the same way. In fact, they use the same test equipment developed and built by Lamar Instruments. However, just because they test the same, don't think they read the same or say the same thing. Far from it.

Every magazine has its own way of writing and its own policies. Some publications, such as *Cycle Guide* and *Car & Driver*, have a single writer prepare a by-lined road test, while the other staff members give their own personal view of the machine in

continued

(left)

The road tester's fifth wheel attaches easily to almost any vehicle. The wheel resolves each revolution into 257 parts and sends a digital pulse via an infrared photo sensor to a microprocessor.

In the passenger's seat is a 6502 microprocessor with a Hewlitt-Packard 97 used to print a permanent record of the test. The vehicle's own battery provides power for the equipment.

reviews at the end of the main text. Other publications, such as *Road & Track*, prepare consensus road tests written by one staff member reflecting the opinions of all who drove the particular car.

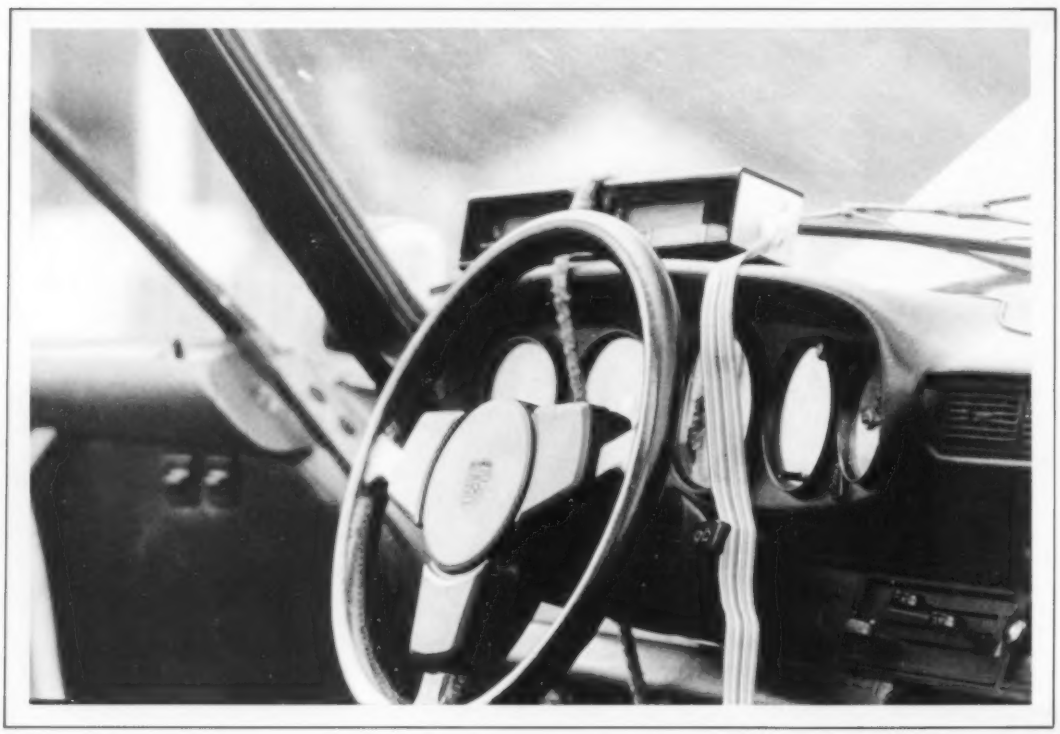
Some magazines do comparison tests. Some do extended reports on single vehicles at intervals of 12,000, 24,000, 36,000 and 48,000 miles. A few publications report on what a sampling of owners have to say about their vehicles.

Most road tests last from a few hundred to just over a thousand miles. But there is a different policy at *Road Rider*. Editor Roger Hull says, "We don't consider a road bike as 'tested' unless we've put a minimum of 4,000 miles on it. Anything less than 4,000 miles gets tabbed as an 'impression.' "

What it really boils down to is picking those magazines that have editorial policies that generally agree with your own line of thinking. There will even be times when you agree more strongly with certain writers' opinions within a magazine than you do with others. Finding a magazine that complements your needs and likes is as much a personal preference as choosing a vehicle color.

During the course of a road test, magazine staffers become very intimate with a machine. You'd be surprised what you can learn about a vehicle while washing it. And it is this intimacy that makes reading several road tests of such value to you as a possible buyer. Besides, as we said before, this kind of reading can be very entertaining.

Where do you start with a road test? As a reader you start with the text. Read the entire article as if it were a freshman English literature assignment. Read through it once for feeling and then learn it. You may soon discover that no matter how many times you read the same text,



Test information is also sent to a digital display mounted in the sight line of the tester.

Performance figures for acceleration and braking are recorded on a drag strip. This street version of a Kremer K-3 Porsche 935 is being pre-tested by *Road & Track*.

you learn something new every time.

In today's world one of the first things that must concern you as a buyer is the number of miles per gallon any vehicle can deliver. Magazines use a variety of means to measure this. Some report the average their staff recorded while testing the machine, including *Road & Track*. When doing multi-vehicle comparison tests, it is not unusual to report the mpg that each vehicle achieved during a convoy-style trip. Other magazines have a test lab provide mpg figures based on a preprogrammed course similar to the EPA. And others, like *Motor Trend*, have a standard course set out on which all vehicles are driven to record their miles per gallon.

What you should be looking for is how these mpg figures compare with other vehicles. Because actual road mileage varies with weather, traffic, the driver and other conditions, magazine mpg numbers are difficult to compare from month to month. For comparison shopping, there is nothing to equal the EPA figures posted on the window sticker.

Most magazine data panels are taken up with hard numbers such as the vehicle's length, width, height, weight and the like. But there are some numbers that are more important than others. And these numbers usually come from a track test, not a measuring tape.

Road & Track's Engineering Edi-

continued

Everything but the fifth wheel fits into these two cases for travel. For tests away from the magazine's home office, the fifth wheel breaks down and travels in another case.

SAFETY AND THE ROAD TESTERS

Automobile and motorcycle magazine staff members are professional drivers. And as with all professional drivers we've talked to, not one of them would consider driving a car without using a seatbelt or riding a two-wheeler without wearing at least a helmet, eye protection and durable clothing. Safety always comes first with them.

Yet some of these same people actively campaign against government safety regulations. Air bags are a favorite target for the car writers, while the motorcycle scribes debate mandatory helmet laws.

Air bag opponents volley with questions about effectiveness, reliability, cost, dangerous chemicals, and on and on. Meanwhile, the motorcycle writers argue for voluntary helmet wearing instead of mandated use.

There should be no question where DRIVER stands on any safety issue. And

tor, Dennis Simanaitis, described track testing as "hours and hours of boredom, interspersed with random moments of stark terror."

The track test portion of a test usually takes the better part of a day. A fifth wheel is attached to the vehicle to get very accurate data. (Don't ask why it is still called a fifth wheel when attached to a motorcycle.) The wheel sends digital pulses via an infrared photo sensor to a microprocessor at a rate of 50 pulses per foot. From these pulses comes the date for acceleration and braking.

For example, the system currently used by *Road & Track* updates mph every 68 milliseconds, distance every foot and time every 1/100 second, according to designer/builder Paul Lamar.

The test driver simply selects a program, throws the proper switches and drives off into the sunset. The equipment does the rest. Some magazines use the best figures they obtained in a number of runs, while others average their data.

OK, we've already told you to look to the EPA for mileage; where do you look for safety? Start with the brakes. Data panels often give you stopping distances from speeds such as 30, 60 or more mph. But you'll need something to compare that with to see how that vehicle measured up. A real clue to brake performance might come from single word ratings some magazines use. And these ratings aren't like airman performance reports; the "excellent" comment is reserved for only the very best.

Other hints about braking performance come with fade testing (half-a-dozen 0.5g stops from 60 mph, with full-bore acceleration in between to simulate mountain driving) and brake pedal pressure measurements. But again, you'll need comparisons.

Now go back through the text and read the braking portion again.

Another good measure of a vehicle's ability to perform safely is the often-used slalom. This is usually a weaving path of traffic cones set about 100 feet apart. The speed through a standard course will reflect how well that vehicle can handle sudden direction changes — when compared with other vehicles over the same course.

There are other test measures that contribute to safety. One that most people don't think about is noise levels. A noisy car becomes uncomfortable, and it is hard to drive as well as you can when you are comfortable. Most magazines now provide interior noise level readings at set speeds. However, *Motor Trend's* Engineering Editor Chuck Nerpel is currently trying to establish a base line that everybody can understand for interior noise levels. "After all," Nerpel noted, "what is 78 db?"

As you can see by the number of times we said "compare," you are going to have to read more than a single road test to find the information you need. You are going to have to read more than a single issue of any magazine. You are going to have to read more than magazines by one group of writers. You are going to get an education. But it will be entertaining. Trust us.

while DRIVER is strongly stating safety issues, there are other consumer publications that say nothing about safety. Rather than be caught on either side of the centerline, these other magazines avoid the issue.

But rest assured, road testers put their personal safety first every time they get behind a wheel or the handle-bars. Think about it.

DRIVER Magazine thanks Dennis Simanaitis, *Road & Track* engineering editor; Chuck Nerpel, *Motor Trend* engineering editor; Roger Hull, *Road Rider* editor and publisher; David Dewhurst, *Cycle Guide* technical editor; Dave Hawkins, *Cycle* associate editor; and Don Coulter, *Car & Drive* managing editor, for their assistance in preparing this article on road testing.

"JUST THIS ONCE . . ."

Sgt. Archie Pelago is having a relaxing drive in his van through a residential district on his way to pick up his girl-friend for a date. He is early and feeling very laid-back. As he comes to an intersection where he will make a right turn, he glances in his mirror and sees nobody is nearby. "No cops," he thinks. He decides to make the turn without stopping, "just this once." As he makes the turn, he hears the roar of a high-performance engine and a screech as brakes are applied. He has no time to do anything before his car is rear-ended. Fortunately, he is wearing the belt. Just when he thinks the worst is over, he exits his car and sees that his girlfriend's brother has just smashed the front-end of his year-old Corvette into the tail of the van.

Sgt. Pelago's worst problem is:

1. Patching things up with his girlfriend's family.

2. Patching up his van and the Corvette.

3. Patching up his face, after the brother gets through with him.

No, his worst problem is stupidity. The stop sign is there for a purpose, not just as a nuisance. Some intersections have blind spots that make it difficult, or impossible, to see oncoming traffic until you are at the corner. Of course, Big Brother shouldn't have been speeding in the Corvette, but who do you think will get the ticket when the police come?

USED

Never check out a purchase at night. Sunlight penetrates better than artificial light revealing flaws that would go unnoticed at night.

After seeing new car prices and figuring out your total transportation expenses, you might decide your interest is really with a used vehicle. But even that is going to be a fairly healthy investment. So now more than ever before it's important to shop wisely to get a good deal.

Buying used vehicles has become a whole lot easier and a lot less risky thanks to scientific automotive test centers. And to make sure the record is straight: ANYBODY WHO BUYS A USED CAR WITHOUT HAVING IT COMPLETELY CHECKED OUT BY A REPUTABLE INDEPENDENT TEST CENTER IS ONLY SLIGHTLY SHORT OF CRAZY. These centers not only tell you if the vehicle is safe and sound, but they thoroughly check the basics such as the front-end, suspension system and brakes. Additionally, diagnostic testing tells the exact tune and internal condition of the engine electronically.

For $25 there's no way you or a mechanic can do as thorough a job checking out a vehicle. And that small sum spent checking out the machine can save you a lot of bread, hassle and disappointment. You'll also get a report on the condition of many of the smaller items with a complete diagnostic check. These include: headlight aim, battery charge and wheel balance. After all, having a lot of minor adjustments and repairs immediately after a purchase can add up to a healthy amount of dough and headaches.

Where do you find independent diagnostic centers? Let your fingers do the walking — look in the yellow pages. Most auto clubs such as the American Automobile Association (AAA) keep lists of reputable area diagnostic centers, also.

But let's say for the sake of saving an argument (and so the technical editor will have a subject to write about) you can't have the vehicle checked out or you want to be sure you don't have a total lemon before spending the money on having it tested. Here are some basic checks everyone should make before purchasing any used motor vehicle.

Begin checking the vehicle out by simply walking around it looking for obvious defects. You should be able to get a good feel for whether the machine has had a hard life by simple observation.

If the car has been sitting for awhile, be sure to check underneath it for liquid splotches that indicate transmission, rear-end or cooling system leaks. Check the tailpipe; if it is oily or gunky, the engine has internal problems. Push down on each corner of the vehicle and release it. If the vehicle returns to its normal position in one smooth motion the shocks should be OK. If it bounces a few times the shocks are probably worn.

Carefully eyeball all body panels for ripples or irregularities that indicate the car has been pressed out after an accident. A once-smacked car is best avoided since it could have suffered other damage in the crash. Also look for areas where the paint doesn't match and check under the fenders and around the doors for paint overspray. If you suspect an area may have been filled with bondo, give it a rap with your knuckles. A thud instead of a metallic sound is bad news.

When eyeing the body panels, it's a good idea to check the rocker panels, door openings, fender panels and around moldings for rust.

When opening doors, stop and look at the oil sticker tags. Are there a lot

CAR buying

of them to indicate good regular maintenance? Or is there only one as if it were put on after the vehicle was repainted?

Bounce the car again and listen for clunks and squeaks.

Check the wheel rims for dents. A few dents are not uncommon during ordinary driving, but a lot of dents or especially large ones are a good sign the vehicle has been driven hard. Naturally you'll want to check the tires for condition and tread depth as well as tread wear patterns. Uneven tread wear is important for a couple of reasons. First, it's a sure indication that you're going to have to sink some money into front-end work and/or wheel balancing. Also the fact that the owner drove the car with the front-end out of alignment may indicate sloppy basic maintenance.

Grab the top of each front wheel and pull firmly. A little play is acceptable, but if there's a lot of give there may be suspension or wheel bearing problems.

The next step is opening the hood and looking around. If the engine hasn't been cleaned, check for oil leaks. A lot of oil and gunk around the oil filler tube means internal engine problems. Pull the dipstick and look carefully for water droplets that indicate a blown head gasket and a very costly repair bill. If the oil is very dirty, the owner probably wasn't careful about regular maintenance.

Check the radiator for any signs of repair that may mean an "overheater." Remove the cap and check the coolant — if it's especially rusty and gunky you probably better close the hood now and look for another vehicle. Also look carefully for any sign of oil in the coolant that would indicate a cracked block and a definite no-sale. Keep an eye out for rust stains around the radiator, water pump, water hoses and freeze plugs.

Make sure the brake master cylinder is topped off and there are no signs of leaks around the unit. This

continued

Besides checking shock action, pushing down on the front of the vehicle can uncover all kinds of problems from squeaks and clunks that need checking out to loose sheetmetal.

Any fluid level that is down may indicate a hidden leak. Always check all the fluid levels.

continued

Look for excessive oil in both the air cleaner housing and on top of the carburetor. Other hints about the previous owner's maintenance habits come from the condition of the air cleaner, gum in the carb and the working condition of the linkage.

also goes for any reservoir such as the one for the hydraulic clutch.

If the vehicle has an automatic transmission, pull the transmission dipstick and check the color and condition of the fluid. It should be sparkly red. If it is orange, black, has carbon specks or smells like varnish the transmission is in definite need of an overhaul.

Pull the PCV valve and see if it clicks freely. Pull the air cleaner and check to see how clean it and the fuel-air mixing system is. Check belt tensions while looking for cracks and fraying. Grab each pulley and yank it from side to side and in and out to check bearing conditions.

Finally, just check around the battery to see that it is clean and uncorroded. Does it look like jumper cables have been used on it regularly for starting?

Inside the car check all the equipment and accessories to be sure they work. Items like turn signals, heater and defroster are a must of course. Make sure the windows and doors open and close correctly. Look for signs of wear that might indicate a hard life.

Be sure to check the brake system by holding down firmly on the pedal for at least 30 seconds — if the pedal stays firm, the hydraulic system is OK. Check for clutch play of not more than one inch.

While you're checking the spare tire's condition keep an eye open for collision damage or repainting signs.

The key to the inside check is to sit in all the seats and make sure that everything works as it was designed. Doors to glove boxes or knobs to switches and handles were not supposed to fall off during ordinary use.

You did remember to include the inside of the trunk in your check, didn't you? And the spare was usable as was the jack, wasn't it?

After checking out the inside of the car, you're ready for a test drive. Listen carefully when you crank the engine. The engine should start quickly and easily. After the engine warms a bit, rev it a few times and check the exhaust smoke color. If it is black you're in need of at least a carb adjustment. But if the exhaust smoke is blue there's a definite problem. Run the engine at various speeds and listen for misses, hesitations or unusual noises. Any irregular engine operation is an indication that at least a tuneup is needed and it's a good reason to have the car diagnosed or at least a compression check made to determine the internal condition.

continued

Look all the way around while sitting in each of the seats. You might be surprised what you can see from one position that was hidden before.

Push hard on the brake pedal. It should feel firm. Keep pushing for 30 seconds or so; it shouldn't gradually sink.

Grab that steering wheel and check the amount of play (movement) there is between when you start turning the wheel and the tires begin to change direction. If it approaches two inches or more, the suspension and steering systems have problems you don't want.

Rocker panels, door openings, fender bottoms and the body around moldings offer the first hints about rust, repainting and accidents. Take time to check them closely — you're going to be living with this purchase for some time.

The tailpipe should be dry. If it's black, gunky or oily there are internal engine problems.

After you get a feel for the car, head for a deserted stretch of road where you can safely make some quick stops to check the brakes. On the way you can make a few acceleration tests to further check engine operation. From a standing start accelerate briskly and smoothly to about 50 mph. The car should accelerate without missing or making any unusual noises — check the rearview mirror for blue smoke while you're accelerating. Also be listening for any unusual mechanical noises like transmission clunks. Blue exhaust smoke or strange noises are good reasons to look for another car.

When you get to a nice stretch of deserted road where you can safely test the brakes, make some progressively harder stops. Make sure the car stops evenly and quickly without

WHY BOTHER?

The basics of buying a late-model car vary slightly from those used in purchasing a clunker.

For example, if you're checking out a later-model car and you discover some minor problems or a fairly major one, you may want to write off the car — especially if you're going to have to pay top dollar for it. But if you discover some problems and you're still interested in the car, these problems might provide some good bargaining points to encourage the seller to

continued

Critical to any used-vehicle purchase is the test drive. Be sure to include all conditions under which you intend to use the vehicle.

pulling, screeching, or making any unusual noises. When you get the feel of the brakes, try locking them on for just an instant. If they won't lock there's something wrong.

Finally, drive the car over various road surfaces to get the feel for the ride comfort and noise levels. If the car drifts on the road or won't track straight down the road when you release the wheel, there's a definite alignment problem. If the wheels seem to bounce or hop you know they need to be balanced.

So, if the car rides and handles to your liking and everything else checked out, you may have just bought a new used car — congratulations. But, if things didn't check out just right, be prepared to look for another car or make sure the "deal" you're getting is saving you enough so you can afford to get the car in shape.

drop the price. Or, in the case of a larger dealer, you can be sure there is a guarantee to have these items repaired before the sale.

On the other hand when you're buying an older car — especially a real clunker — you must expect the car isn't going to be in perfect condition. And since you'll probably be buying from a private owner on an as-is basis, it's important to check out the vehicle thoroughly. Then weigh how much you're paying against how much it will cost to get the car in shape.

But with a clunker your main concern will be safety before reliability. So your big items will be tires, brakes and steering before engine performance.

THE EDITOR SPEAKS

DOUBLE CLUTCH

ABOUT THIS ISSUE

This issue of *DRIVER* is a "how to" publication — how to buy your personal transportation, new or used.

Not so long ago, buying a car was at least 90% fun. The serious business was the trip to the credit union to find out what the monthly payments would be. Most of us thought about style and color a lot more than we thought about miles per gallon. Crashworthiness was the farthest thing from our minds.

Today all that has changed. The car buyer has to reach a compromise between what he wants and what he actually needs. He has to think about brakes and suspension systems. Good mileage is a prime consideration. So are insurance costs. Insurance is so expensive that some buyers find they really can't afford the new car they thought they could because the full coverage required by the lender adds so many dollars to the payments.

Then there's the price of the new cars themselves. Once upon a time smaller cars had smaller prices. Not any more. Prices are high and going up. Since General Motors introduced the X-body Citation, it has raised the base price over 35 percent. Both Chrysler Corp. and American Motors announced a second round of price increases even before their new models hit the showrooms. Chrysler now (mid-September) says their K-cars will have a base price of about $6,200. But few people buy a car at the base price. It is not impossible to find a GM X-body with a sticker of over $10,000, and no doubt some of the K-cars will go that high. Prices of imported cars are increasing, too.

How about safety? We would have liked a page in this issue listing the safest new cars on the market, but we found that was impossible. The safest cars are the bigger ones that use a lot of gasoline. Most military people don't want them or can't afford to drive them.

Our government requires every car sold in this country to be crashworthy at 30 mph. But when the government recently crashed some new cars at 35 mph (crash forces 37 percent greater), results were disappointing. Instrumented test dummies failed to "survive" in the Honda Civic and Prelude, Toyota Tercel and Corolla, Datsun 310 and 200-SX, Mazda 626, Subaru GLF, Audi 4000 and Volkswagen Rabbit convertible.

In addition, the government crashed a 1980 Ford Mustang and Toyota Celica head on, each moving at 35 mph. The belted dummies in the Mustang passed the survivability test. Those in the Celica did not.

Passing the 35 mph barrier crash were a 1980 Chevrolet Chevette equipped with automatic belts and a 1980 Fiat Strada.

Bear in mind that these tests were 5 mph faster than present government standards require, and also that not every small car on the market was tested. Nevertheless, the tests confirm what the safety experts have been telling us for a long time: Small cars are not as safe as large cars. This is true not only when large and small collide but also when small and small collide.

The *DRIVER* staff had lunch last week with an executive of the Insurance Institute for Highway Safety, and he is one gloomy fellow. He predicts an increase in traffic deaths in direct proportion to the increase in small cars on the road. He pointed out that the auto industry has the technical know-how to build a safer small car but isn't using it. American manufacturers are in the process of spending $80 billion to redesign and retool, primarily to improve fuel economy, not safety. This unbelievable expenditure will determine the type of vehicles we will be driving for the next 20 years. During that long period, "safety" may be added on in one way or another but not designed in.

We must be careful not to over-simplify here. Safety certainly can be added on. For instance, crushable polyurethane foam stuffed under the car body provides a great deal of protection to occupants in crashes even at freeway speeds. But the foam is presently very expensive and chemical companies have neither the prospective market nor the incentive to work at lowering the cost. The foam also adds several hundred pounds of weight to the vehicle, and car makers are currently as weight conscious as professional jockies.

If all this sounds like a sermon against small cars, it is not. Our message is about care in selecting one. Remember that driving skill is far more important in the small car. The government says a car owner is eight times more likely to be killed in a small Japanese car than in the large American autos of the '70s. You can ignore that statistic only if you are willing to become a really proficient, alert, sober driver. Your small car will save you money at the gas pump, but it will not forgive your driving errors.

BACKFIRE

LETTERS to the EDITOR

"PASSING FANCY"

My compliments on an outstanding article "Passing Fancy" (Aug. '80 issue).

I do believe the car used in the article was a Trans Am. To get to the point, either the passenger in the car didn't use a zoom lens while taking pictures or the driver wasn't applying the two-second rule. Check it out!

Sgt. Chris Roth, USA
302 Wolf St., #29
Killeen, TX 76541

They probably got a little close in a couple of those shots, but it was for the purpose of getting the photos for the article.

"SECOND COLLISION"

Your comments and long article on "Second Collision" reflects the safety of utilizing seat belts in a vehicle in a front-end collision. What is the safety factor getting hit "broadside?"

In July, while driving a '72 Pinto into a parking lot, another full-sized car hit my car "broadside" at approximately 15 mph.

I ended up with a severe scalp laceration, three days in the hospital, and a week convalescing at home. The impact on the driver's side threw me against the door and my head came into contact with the "hook" above the door which can hold, and was holding, the seat belts.

I later checked the distance between the hook and head which

was approximately three inches, and with seat belts adjusted correctly discovered that the seat belts would not prevent me from smashing into the door nor my head colliding with the hook above the door!

I do wear seat belts in my new car (not a compact), but do believe the size of vehicles in any accident determines the extent of injuries to the occupants. Would seat belts in a Volkswagen help anyone in a collision with a truck or Greyhound bus?

I am the Department Head of the MOS Libraries at Fort Lewis, Washington, and I insure that your excellent magazine is given wide distribution.

I might add that this was my first accident after driving 40 years — including 10 years in Europe. People who don't have accidents are not only good drivers — they are "lucky."

Mr. George W. Yernesek
10209 SW 87th Ave.
Tacoma, WA 98498

Yes, the size of the car is important. Statistically, when a small car is involved in a collision with a truck or Greyhound bus, the law of physics will prevail, and the small car will come out second best.

The national safety organizations are predicting a big jump in deaths and injuries from traffic accidents as Americans move to small cars. It is more dangerous to the occupants when small cars collide with each other, consequently the small car driver doesn't have to worry only about getting hit by a big vehicle such as a bus. A fact remains – the single most injury reducing device in a car is the seat belt. Stack the deck in your favor, George; wear your belts at all times.

WORDLESS DASHBOARD SIGNS

In your August 1980 issue your back cover had an article on wordless dashboard signs. It noted that GM was using them in their X-body cars.

What you did not mention is that Ford is using them in many of their vehicles also.

I have a 1980 Mercury Capri RS and have the oil, temperature, battery, fuel and hazard signs.

SK2 (SS) F.D. Stoll, USN
210 Sunset Drive
Idaho Falls, ID 83401

Right you are. Foreign cars have been using some of these symbols for many years, too. We mentioned GM because the big manufacturer is making the change on such a large line of cars.

OVERSIMPLIFIED

There I was, driving along "fat, dumb and relatively happy" with the "car-sensitive" seatbelts installed in my 1978 pickup truck, until I read "The Second Collision" in the August 1980 DRIVER. That was a very good article. However, one item bothers me: In figures 1 and 2 you show the operating principle behind the car-sensitive locking seatbelt mechanism. I can see how such a mechanism would lock as the result of an impact in the fore/aft axes of the vehicle — but I can also see that it would NOT react to any impact from the sides!

Was your illustration oversimplified to show your point, or should I start replacing the seatbelts in my truck with solidly anchored, non-sensitive seatbelts so that I will be firmly restrained in case of an impact from ANY direction?

Keep up the good work . . .

TSgt Wayne H. Thompson, USAF
7107 Glen Grove
San Antonio, TX 78239

Basically, the illustration was oversimplified. Any vehicle collision is going to generate forces along several axes. If your vehicle is moving, one of these axes is going to have to be fore/aft. The belts will lock. Even if your vehicle were stationary, the entire force of the collision would have to impact at the exact center of the pendulum's fulcrum to keep from activating the locking bar. This is impossible since the collapsing metal of your vehicle is going to be shifting the fulcrum's axes. Keep wearing your belts and driving safely.

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